

5 Year Sidewalk and Street Reconstruction Plan DPW 05/28/10

This is a working document. DPW continues to update this document as a result of internal and public comment.

Introduction:



This is the City's third 5 Year Sidewalk and Street Reconstruction Plan identifying the streets and sidewalks that are anticipated to be reconstructed each year for the next 5 years.

This third year continues the increased emphasis on a complete streets program and includes the reconstruction of missing ramps on major arterials, based on the survey of missing ramps.

Complete Streets are streets designed for all users – pedestrians, cyclists, bus riders, drivers and residents. More sidewalks are included, which provides for increased accessibility for pedestrians.

This is intended to be a living document that will be updated regularly as conditions change.

Goals of 5 Year Plan:

- To reconstruct streets and sidewalks with an emphasis on a Complete Streets approach: designing the street for all users.
- To maintain safe, accessible streets and sidewalks.
- To reconstruct streets and sidewalks in a prioritized fashion based on need.
- Provide for comprehensive inspection / repair and upgrading of city utilities, as well as public utilities, to ensure street system integrity is maintained for as long as possible once construction is complete.
- To effectively communicate design and construction projects with neighborhoods and facilitate a more integrated design process.
- To construct projects efficiently with minimum disruption to community life.
- To provide reasonable access for all users, during street reconstruction.





Constraints / Uncertainties:

- Based on budget predictions that are uncertain.
- Based on sewer separation / storm water management project schedules that are uncertain.
- Based on future street condition assessments that are subject to change.
- Does not consider utility failure / repair / replacement which is unpredictable.
- Severe winter conditions can lead to higher than expected levels of deterioration on streets.

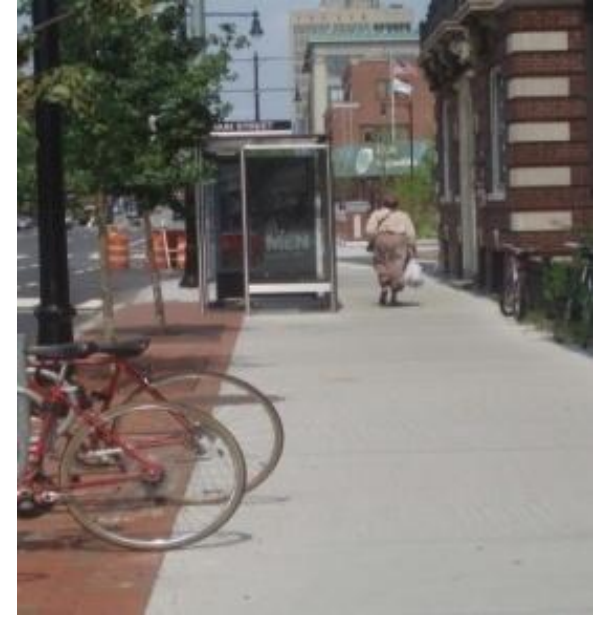
DPW will review on an annual basis. The uncertainties are significant 4 and thus the annual revisions may also need to be significant.

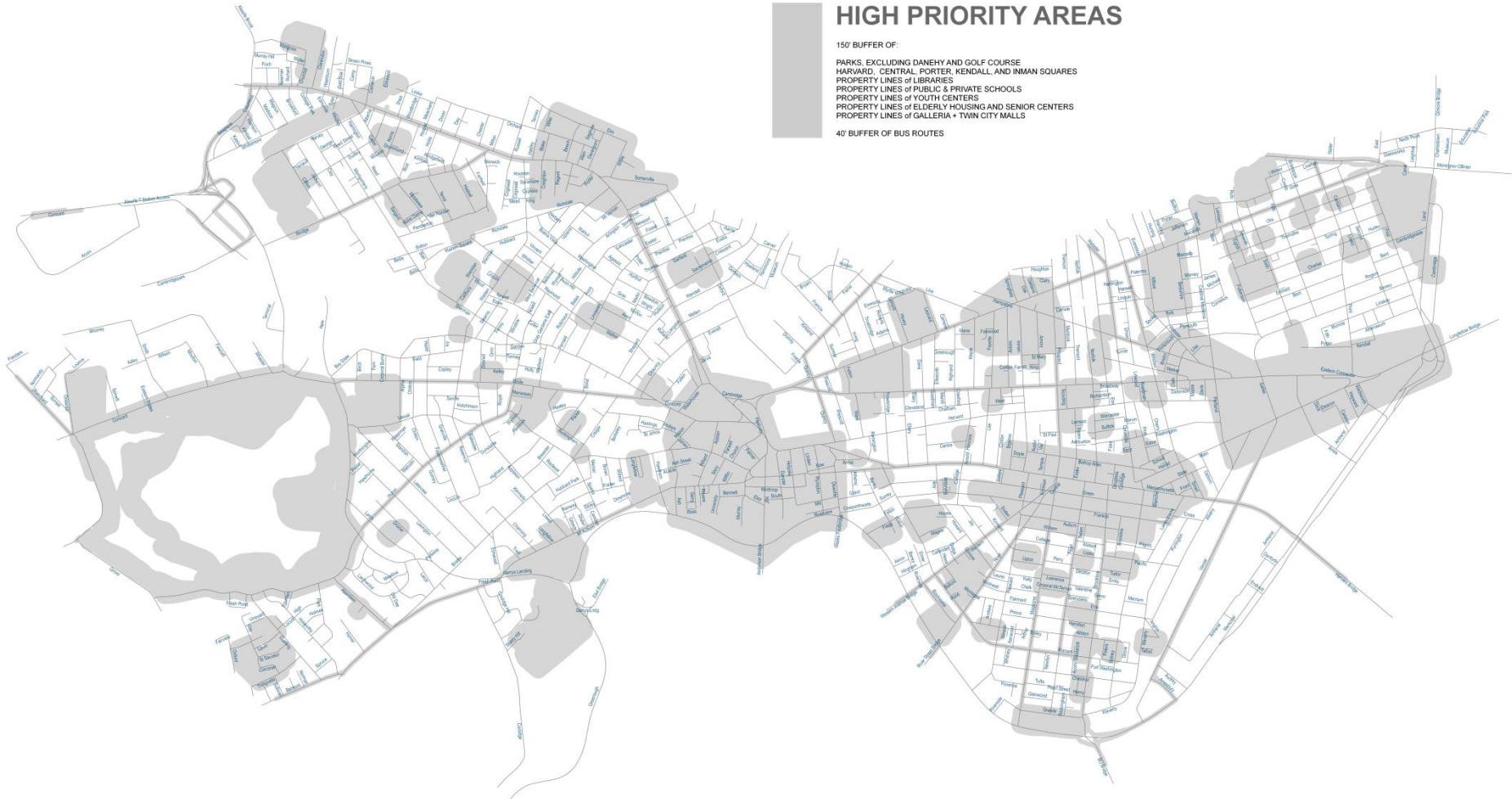
Prioritization & Scheduling

Reconstruct sidewalks in poor condition and streets in poor condition in **high priority areas**, which are designated as:

- Areas within a 150 foot buffer of Parks, Major Squares, Libraries, Schools, Youth Centers, Elderly Housing and Senior Centers.
- Areas within a 40 foot buffer of bus routes.
- Major thoroughfares, so as to maintain the structural integrity of the street under heavy traffic conditions.
- Commission for Persons with Disabilities' priorities.

Reconstruct neighborhood streets that are in a significantly deteriorated condition, as funding allows.





HIGH PRIORITY AREAS

150' BUFFER OF:

PARKS, EXCLUDING DANEHY AND GOLF COURSE
HARVARD, CENTRAL, PORTER, KENDALL, AND INMAN SQUARES
PROPERTY LINES OF LIBRARIES
PROPERTY LINES OF PUBLIC & PRIVATE SCHOOLS
PROPERTY LINES OF YOUTH CENTERS
PROPERTY LINES OF ELDERLY HOUSING AND SENIOR CENTERS
PROPERTY LINES OF GALLERIA + TWIN CITY MALLS

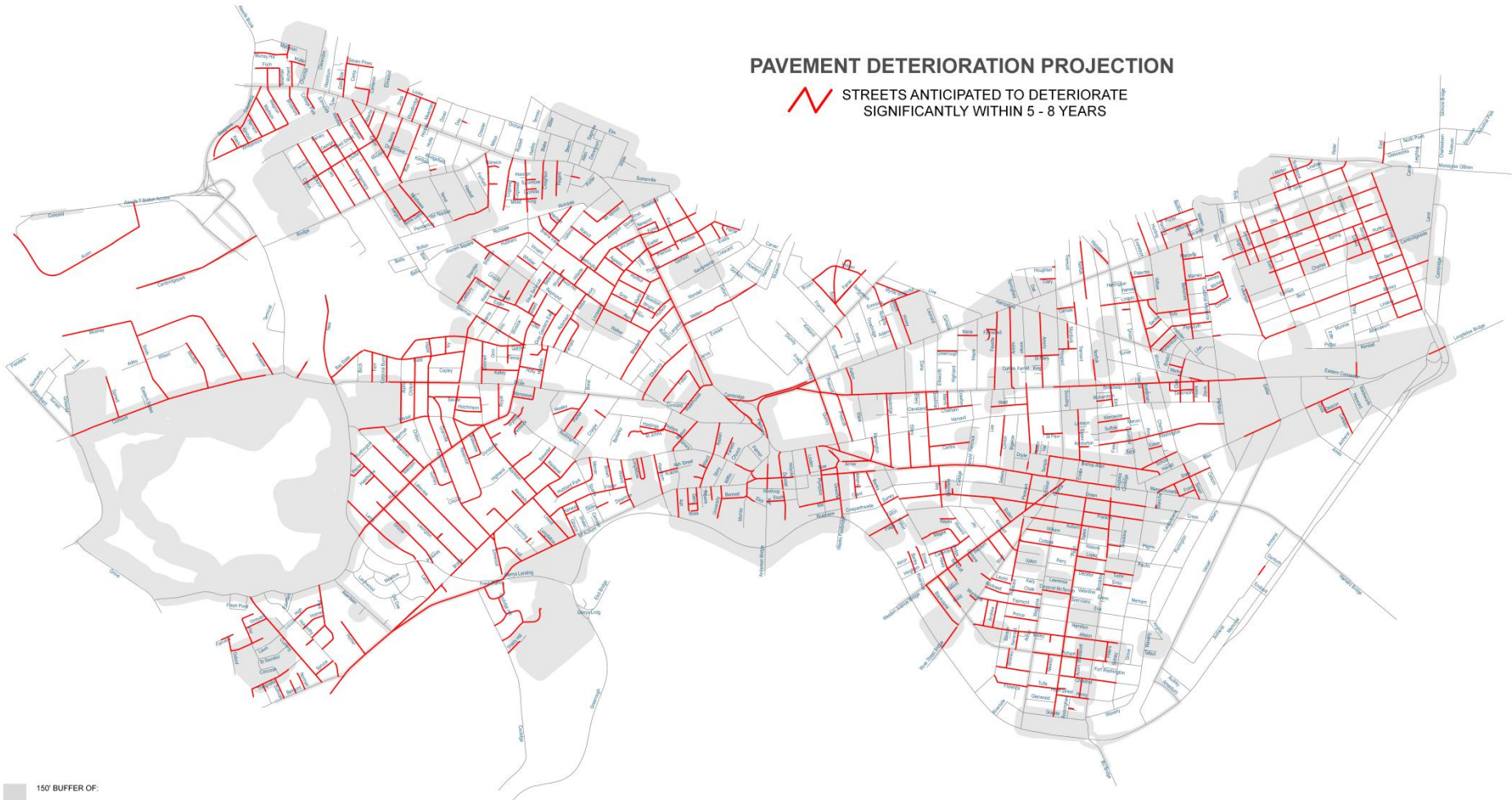
40' BUFFER OF BUS ROUTES



PAVEMENT DETERIORATION PROJECTION



STREETS ANTICIPATED TO DETERIORATE
SIGNIFICANTLY WITHIN 5 - 8 YEARS



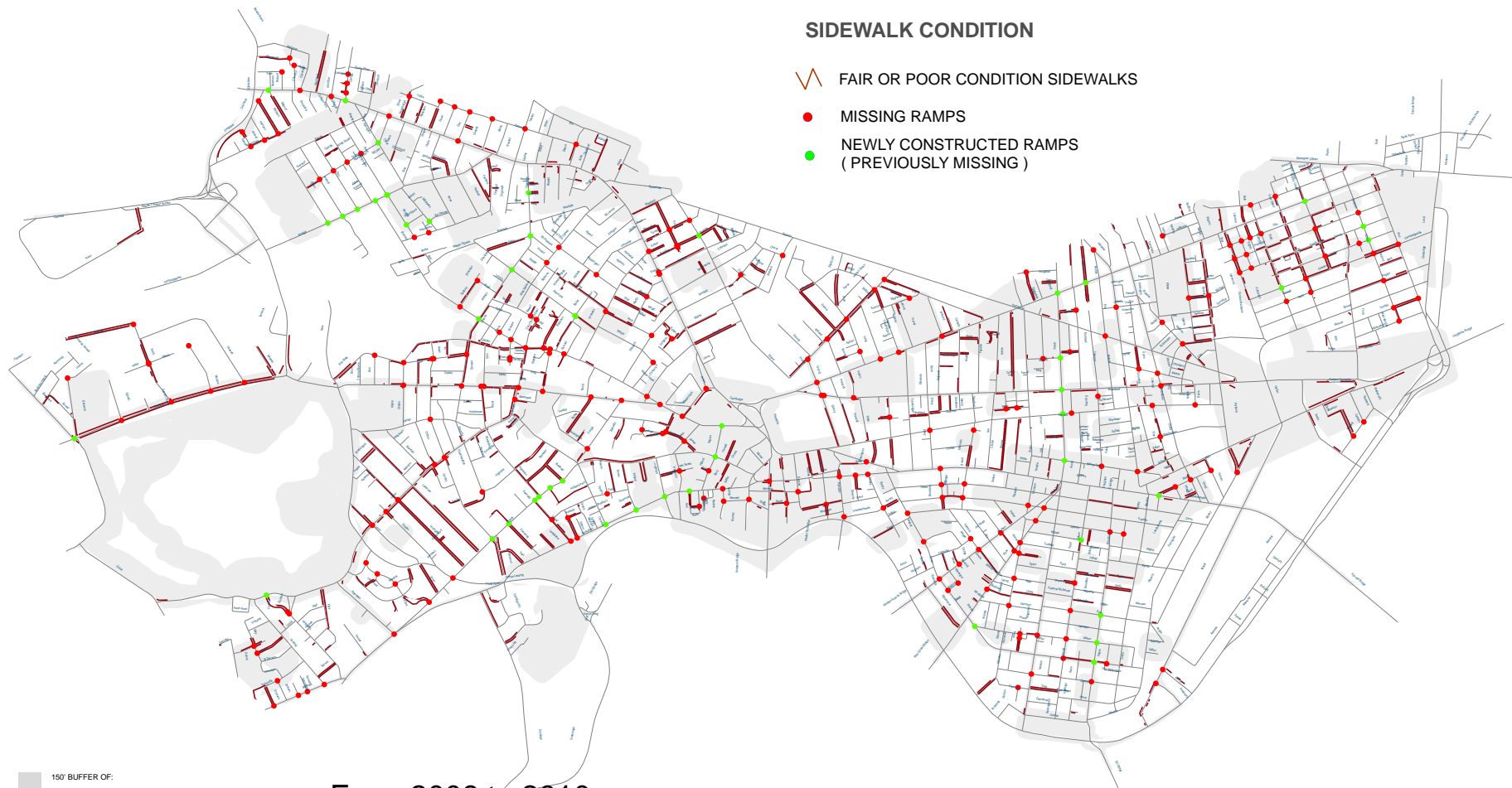
150' BUFFER OF:

PARKS, EXCLUDING DANEHY AND GOLF COURSE
HARVARD, CENTRAL, PORTER, KENDALL, AND INMAN SQUARES
PROPERTY LINES OF LIBRARIES
PROPERTY LINES OF PUBLIC & PRIVATE SCHOOLS
PROPERTY LINES OF YOUTH CENTERS
PROPERTY LINES OF ELDERLY HOUSING AND SENIOR CENTERS
PROPERTY LINES OF GALLERIA + TWIN CITY MALLS

40' BUFFER OF BUS ROUTES

CITY OF CAMBRIDGE ENGINEERING
FIVE YEAR PLAN - 5/1/09

New Street condition assessments are completed every three years and the plan is updated accordingly.



From 2009 to 2010

Constructed 96 previously missing ramps

2010 to 2011

Continuing to prioritize missing ramps on major arterials:
Mass. Ave., Concord Ave., etc.

150' BUFFER OF:

PARKS, EXCLUDING DANEHY AND GOLF COURSE
HARVARD, CENTRAL PORTER, KENDALL, AND INMAN SQUARES
PROPERTY LINES OF LIBRARIES
PROPERTY LINES OF PUBLIC & PRIVATE SCHOOLS
PROPERTY LINES OF YOUTH CENTERS
PROPERTY LINES OF ELDERLY HOUSING AND SENIOR CENTERS
PROPERTY LINES OF GALLERIA + TWIN CITY MALLS

40' BUFFER OF BUS ROUTES

CITY OF CAMBRIDGE ENGINEERING
FIVE YEAR PLAN - 8/12/10

Budget

Assumptions:

This plan assumes \$2 million per year for street and sidewalk reconstruction. Additional funds are occasionally allocated for additional enhancement projects or for other street and sidewalk restoration projects.



Over the last 3 years, the City has also appropriated the following :

Broadway	\$750,000
Brookline Street	\$1,900,000
Harvard Square – JFK Street	\$2,000,000
Kendall Square – Main Street	\$500,000 design FY11 \$5,000,000 construction anticipated FY12
Additional street and sidewalk work	\$10,150,000

Budget Assumptions



Sewer Separation and Stormwater Management Program

The City has an on-going capital program for sewer separation, stormwater management and infrastructure renewal throughout the city.

The City is committed to restoring streets and sidewalks to the maximum extent necessary / possible as an integral part of these projects.

These projects are subject to change in schedule due to financial, legal, environmental, infrastructural and level of service considerations and are reprioritized every five years.

Sewer Separation **And** **Stormwater Management Program**



The Sewer Separation & Stormwater Management Program is a city wide effort.

The Alewife Sewer Separation Program:

Federally Mandated program requiring extensive infrastructure work between Danehy Park, Brattle Street and Appleton Street as well as sewer separation in the area between North Mass Ave and Whittemore Avenue in North Cambridge.

The Agassiz Area Sewer Separation Program:

On-going sewer separation and stormwater management program between Beacon Street in Somerville, Kirkland Street and Massachusetts Avenue.

Harvard Square Sewer Separation Program:

On-going sewer separation and stormwater management program on the west side of JFK Street.

Area 4 Sewer Separation Program:

On-going sewer separation and stormwater management program, including work on South Mass Ave. and on Bishop Allen Drive as well as those neighborhood streets to the immediate east of Columbia Street.

Common Manhole Elimination Program:

State mandated program requiring the elimination of all common manhole structures in existing separated areas throughout the city. There are a significant number of such structures in the Cambridge Highlands, Area 4 neighborhood and Cambridgeport neighborhood.

Western Avenue Infrastructure Renewal Program:

This new project seeks to reconstruct the infrastructure in and immediately around the Western Avenue area of the city to include sewer separation / stormwater management, water mains, public utilities, streets and sidewalks.

5-Year Plan

The following sheets identify the streets and sidewalks that the City anticipates reconstructing over the next 5 years.

Scope of Work:

- The approach includes an increased emphasis on complete streets – streets designed for all users – pedestrians, cyclists, bus riders drivers and residents.
- Streets will be repaved and restriped.
- To improve bicycle accommodation, streets will be evaluated for appropriate bicycle facilities such as bicycle lanes or raised bicycle lanes.
- To improve access, all curb cuts will be reconstructed.
- Any crossing islands or medians shall be built or retrofitted to accommodate accessible pedestrian crossings.
- In accordance with City Council goals, projects will include planting additional street trees. See page 18 for more on street trees.



Five Year Plan

Completed (FY06-FY10)

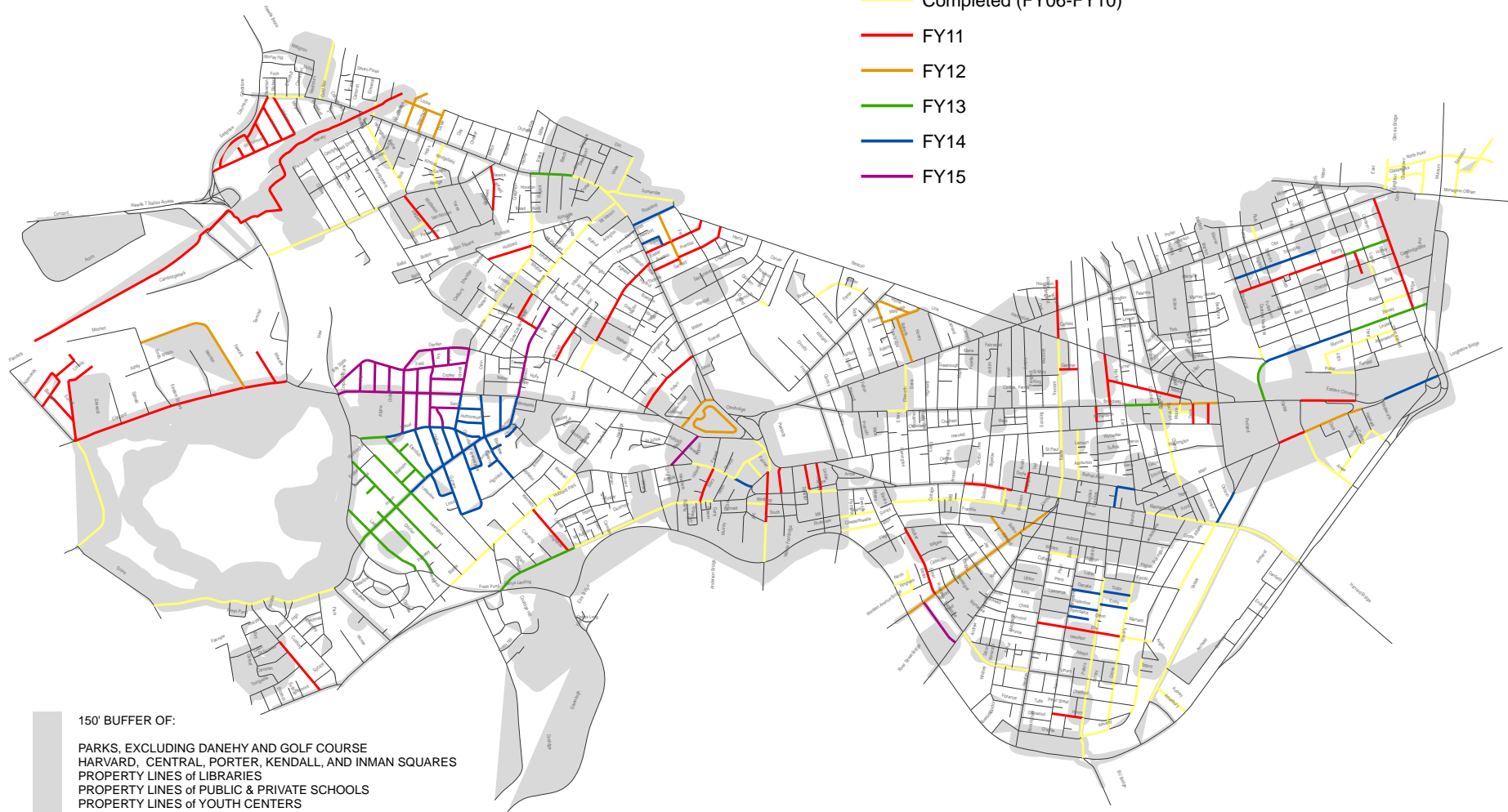
FY11

FY12

FY13

FY14

FY15



150' BUFFER OF:

PARKS, EXCLUDING DANEHY AND GOLF COURSE
HARVARD, CENTRAL, PORTER, KENDALL, AND INMAN SQUARES
PROPERTY LINES of LIBRARIES
PROPERTY LINES of PUBLIC & PRIVATE SCHOOLS
PROPERTY LINES of YOUTH CENTERS
PROPERTY LINES of ELDERLY HOUSING AND SENIOR CENTERS
PROPERTY LINES of GALLERIA + TWIN CITY MALLS

40' BUFFER OF BUS ROUTES

CITY OF CAMBRIDGE ENGINEERING
FIVE YEAR PLAN - 7/11/2010

The following link provides a list of the various street segments where construction is scheduled over the next five years. The tables are sortable chronologically, alphabetically or by scope or contract. The degree of uncertainty concerning, locations, scope and schedule increases in the later years of the plan.

<http://www.cambridgema.gov/theworks/ourservices/engineering/aboutengineering/fiveyearplan.aspx>



Miscellaneous Sidewalk Program:



This program is used to address discrete sections of sidewalk throughout the city.

- *Repairs are typically a block in length, but can be as small as one panel.*
- *Priority is given to sidewalks and curb cuts in high priority areas.*
- *The Budget for this program is typically \$400,000 to \$450,000 per year.*

Miscellaneous Sidewalk Program

A portion of the Miscellaneous Sidewalk Program funding will be reserved for sidewalks and curb cuts where access is of acute importance, as identified by the Commission for Persons with Disabilities and DPW.

If you know of a location that is a critical access issue and is not addressed in the 5 Year Plan, please contact the Commission at:

Cambridge Commission for Persons with Disabilities

Michael Muehe, Executive Director

Kate Thurman, Disability Project Coordinator

51 Inman Street, second floor

Cambridge, MA 02139

mmuehe@cambridgema.gov

617-349-4692 voice : 617-492-0235 TTY : 617-349-4766 fax

Highlights of the year's priority locations include: Completed construction of curb extension at excessively steep driveway at 46 Bigelow Street, raised crosswalk on Appian Way, and sidewalk on Mass. Ave. near Burns Apartments; design of curb cuts on Mass. Ave. and Holyoke Street; and spot curb cut repairs.

Sidewalk Materials

Pedestrian Ramps:

All new pedestrian ramps, to include landing areas, will be constructed using concrete, and will include truncated dome panels within the ramp.



Sidewalk Materials:

Concrete and wire cut brick without beveled edges, placed on a smooth asphalt base, will be utilized as the sidewalk materials of choice throughout the city.

Historic Districts:

DPW will work collaboratively with the Historic Commission to ensure that sidewalk reconstruction work is “appropriate” and not incongruous to the district.

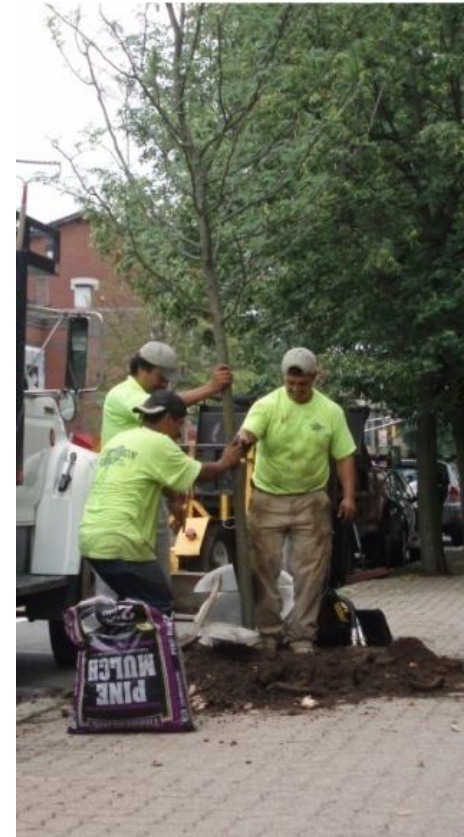
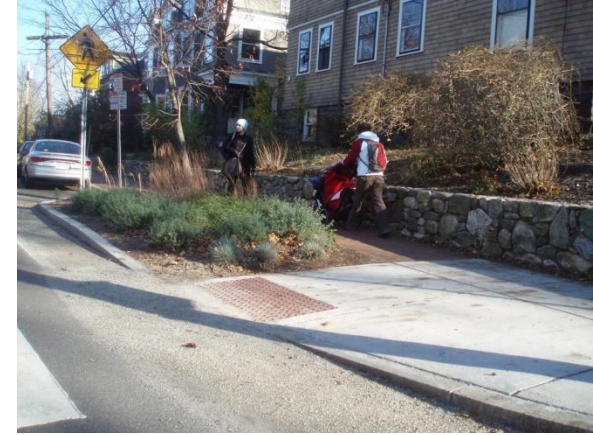
Street Trees

Goals:

- To increase the number of street trees, while maintaining accessible sidewalks.
- To protect existing street trees during construction.

Additional Street Trees: will be planted as part of street and sidewalk projects. This includes sidewalk trees, as well as back of sidewalk trees on private property, particularly on streets with narrow sidewalks.

Tree Protection During Construction: In accordance with state law, street trees must be protected from damage during construction.



Access During Construction

MUTCD, 2009:

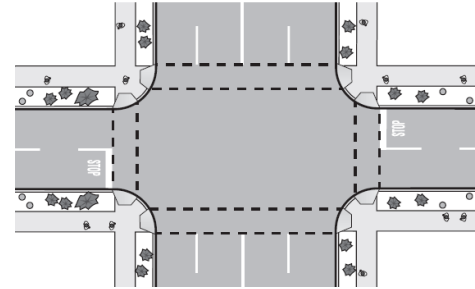
The latest edition of the Manual on Uniform Traffic Control Devices, (MUTCD), 2009, published by the US DOT / Federal Highway Administration, includes specific requirements for pedestrian access in work zones.

- Where pedestrian routes are closed, alternate pedestrian routes shall be provided.
- Whenever possible, work should be done in a manner that does not create a need to detour pedestrians from existing routes or crossings.

Crosswalk Locations

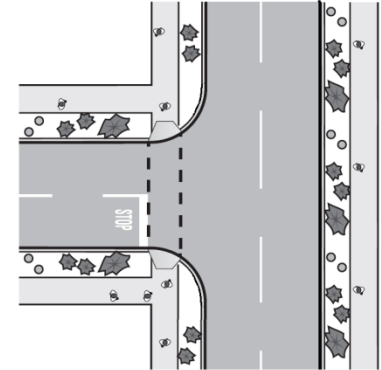
4-way intersections

- Unless site conditions warrant a different treatment, 4 crosswalks and 8 pedestrian ramps should be provided.



“T” intersections

- A minimum of 1 crosswalk and 2 pedestrian ramps are required to provide accessible path of travel along the main corridor.
- Specific site conditions (traffic volumes, pedestrian generators, distance to nearest crosswalk) should be considered to determine if crosswalks across the main street should be provided.



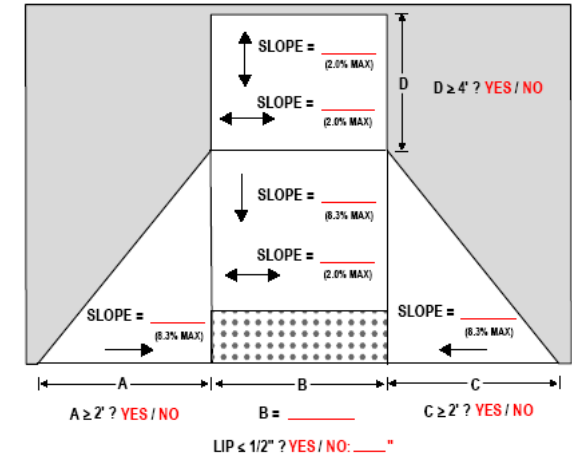
Mid-Block Crossings

- Are generally not used, unless the blocks are especially long or there is an especially large pedestrian flow.

New Construction City Projects

LOCATION _____ DATE INSPECTED _____

RAMP # _____ BY _____



The following are the requirements specific to all City of Cambridge construction projects in the Public Right of Way.

- New sidewalks (concrete or brick) will meet ADA / AAB requirements.
- All roadway paving that abuts pedestrian ramps, will include the reconstruction of abutting non-compliant pedestrian ramps.
- To minimize the need for non-compliant transition segments between old and new sidewalks, if a compliant segment within 15 ft. of the end of proposed new work is identified, work will be extended to the compliant segment.
- If a significant portion of sidewalk on a given side of a block is reconstructed, the entire sidewalk on that side should be compliant.

New Construction

Private Entities

The following are the requirements specific to all street and sidewalk reconstruction projects constructed by private entities within the City of Cambridge Public Right of Way.

- New sidewalks (concrete or brick) will meet ADA / AAB requirements.
- All roadway paving that abuts pedestrian ramps, will include the reconstruction of abutting non-compliant pedestrian ramps.
- To minimize the need for non-compliant transition segments between old and new sidewalks, if a compliant segment within 15 ft. of the end of proposed new work is identified, work will be extended to the compliant segment.
- If a significant portion of sidewalk on a given side of a block is reconstructed, the entire sidewalk on that side should be compliant.
- If a full block of sidewalk is being reconstructed, a PE stamped design will be required and a PE certification of compliance will be required after construction.
- If more than 30 feet of sidewalk, a curb cut, or a driveway is being constructed, a survey and design will generally be required. Survey and design requirements will be determined by DPW based on the specific location.

New Construction

Private Utilities

The following are the requirements specific to all street and sidewalk reconstruction projects constructed by private utilities within the City of Cambridge Public Right of Way.

- Sidewalks construction subsequent to utility work will meet ADA / AAB requirements.
- Roadway paving, subsequent to utility work, that abuts pedestrian ramps, will include the reconstruction of abutting non-compliant pedestrian ramps.
- If a full block of sidewalk is being reconstructed, due to utility work, a PE stamped design will be required and a PE certification of compliance will be required after construction.
- If more than 30 feet of contiguous sidewalk, a curb cut, or a driveway is being constructed, due to utility work, a survey and design will generally be required. Survey and design requirements will be determined by DPW based on the specific location.
- In lieu of final restoration payments (Street Preservation Offset Fees), made by utility companies, will include the complete cost of the necessary sidewalk restoration required.

Traffic Signals



Audible Signals:

Audible traffic signals provide additional information to pedestrians navigating a signalized intersection. They use sound to indicate when the walk signal is on, alerting pedestrians as to when they should cross the street. Audible signals will be considered in locations after a request has been received and in consultation with the Disabilities Commission. The audible signal shall not be heard from the inside of any building.

Signal Control Cabinets

Traffic signal control cabinets mounted on poles are under consideration for relocation by the Traffic Department. Where viable alternative locations exist, cabinets will be moved to ground mounted locations. This is often done in conjunction with street and sidewalk reconstruction.

Next Steps

The 5 Year Plan is a living document that will be updated regularly. As part of that process, DPW will:

- Review plan annually with the Commission for Persons with Disabilities, Pedestrian Committee, Bicycle Committee and Town Meeting of Seniors.
- Update the pavement condition and sidewalk condition data and corresponding maps.
- Annually update the 5 Year Plan to account for the changing conditions of our streets and sidewalks. For latest version:
<http://www.cambridgema.gov/theworks/ourservices/engineering/aboutengineering/fiveyearplan.aspx>

Please send any questions or comments to:
Katherine Watkins, Department of Public Works
kwatkins@cambridgema.gov or 617-349-4751